fixed costs in the long run, it will be forced to exit ("complete foreclosure"). And even if such exclusion allows the rival to cover its fixed costs but does so at an artificially smaller scale ("partial foreclosure"), the rival cannot price efficiently.[38]

34. Second, Comcast's exclusionary conduct deprives rival programmers of the most efficient means of obtaining subscribers and advertisers. This is true even if rival sports networks are not deprived of economies of scale.[39] This harm is caused by depriving Comcast's programming rivals of the most efficient means of selling advertising and programming, and thereby forcing them to use less efficient alternatives. Such conduct deprives rivals of market share, as described above, and also causes harm by raising their costs even if they achieve the required market share needed to exploit such economies. As a result, rival programmers are weakened competitors in all aspects of the programming industry, including in their ability to acquire programming from content owners.

35. By favoring its affiliated national sports networks, Comcast decreases the profitability of rival networks. Operating and sales costs are increased as rival firms shift to higher cost suppliers or less efficient distribution channels.[40] In this case, NFL Network's selling costs would be expected to be higher because, to achieve the same level of penetration, it must invest in greater promotional activity to induce Comcast subscribers to select the more expensive premium tier. NFL Network did indeed incur greater costs when it set out on a grassroots campaign to retain broader customer exposure.[41] Alternatively, NFL Network could explicitly

38. That is, the rival will be forced to produce at a level that corresponds to the inelastic portion of its demand, where a price reduction (and output expansion) would otherwise increase its profits.

39. *See, e.g. Anticompetitive Exclusion, supra* note 1, at 234-45.

40. *Id.* at 234 ("Competitors of the purchaser experience a cost increase as they necessarily shift to higher cost suppliers or less efficient inputs.").

41.

subsidize viewers' cost to see NFL Network on a premium tier. Either of these responses would raise NFL Network's incremental selling costs, thereby making it a weaker competitor. Moreover, for each viewer lost due to Comcast's discriminatory conduct, NFL Network loses advertising revenues that serve to defray NFL Network's costs. Thus, causing NFL Network to lose incremental advertising revenues (by placing NFL Network on an inferior tier) is tantamount to raising NFL Network's costs.[42] Comcast benefits from its discriminatory conduct because Comcast-affiliated sports programmers, such as Versus, Golf Channel, and SportsNet, face a weakened and higher-cost competitor that is less able to restrain Comcast's pricing power in programming and related advertising.[43] Comcast can therefore raise its prices above the levels that it could charge if not for the exclusionary conduct, thus harming viewers and advertisers.

36. It bears emphasis that Comcast need not drive NFL Network from the market for its exclusionary conduct to be profitable. It is always better to compete against a higher-cost or less-efficient rival. Higher-cost firms reduce output compared to lower-cost firms,[44] which may allow the lower-cost firm (here, Comcast) to raise prices or increase market share. Additionally, raising a rival's cost does not require a firm to sacrifice short-term profits.[45] Thus, it is incorrect

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42. According to a General Accounting Office report, cable networks received nearly half of their revenue from advertising in 2002. *See* U.S. General Accounting Office, Statement of Mark L. Goldstein, Director, Before the U.S. Senate Committee on Commerce, Science, and Transportation, Subscriber Rates and Competition in the Cable Television Industry, Mar. 25, 2004, at 14.

43. Comcast SportsNet networks are regional sports networks that operate in many major Comcast markets, such as Washington, D.C. (which is served by Comcast SportsNet Mid-Atlantic). *See* Table 1.

44. *Anticompetitive Exclusion*, *supra* note 1, at 247 ("Even if the purchaser succeeds only in raising its rivals' costs (and does not also gain power to raise price), it still may deprive society of another benefit promised by free markets, minimization of the costs of producing output. This benefit, often termed "production efficiency," is realized when each firm minimizes its own costs of production and when all firms produce output commensurate with their relative costs (i.e., when lower cost firms produce more output). Simply raising some rivals' costs, without conferring power over price, can reduce production efficiency if, as a consequence, excluded rivals reduce output leaving slack that can only be taken up by higher cost competitors.").

45. *Id.* at 224 ("Raising rivals' costs can be a particularly effective method of anticompetitive exclusion. This strategy need not entail sacrificing one's own profits in the short run; it need not require classical market power as a prerequisite for its success; and it may give the excluding firm various options in exercising its acquired market power.").

to analyze Comcast's exclusionary behavior on the premise that Comcast must sacrifice profits in the short term to entirely drive its rivals from the market. No such sacrifice is needed here. Indeed, Comcast perversely gains *gross* incremental revenues of approximately $7 per month for every customer who subscribes to the premium sports tier through its discriminatory conduct, as subscribers with a strong preference for NFL Network are forced to pay higher monthly subscription rates to Comcast.

37. The theory of vertical foreclosure presented above is illustrated by a recent case study of discrimination involving apparent discrimination by a vertically integrated cable operator against an unaffiliated sports network. In North Carolina, Time Warner Cable decided to place the unaffiliated regional sports network C-SET on a narrowly penetrated premium digital tier.[46] C-SET was anchored by sports game programming for the NBA's Charlotte Bobcats.[47] Citing lower than expected audience and advertising numbers, C-SET has since shut down[48] and its sports programming rights (including the Bobcats rights) have been sold to Time Warner Cable.[49] Time Warner Cable now shows the Bobcats programming on an affiliated network carried on its Expanded Basic tier.[50]

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46. Kurt Badenhausen, *Full-Court Press; Robert Johnson spent $300 million to create the Charlotte Bobcats, only to struggle with tepid attendance, indifferent sponsors and poor play. But his big bet now may be starting to pay off,* FORBES, Jan. 9, 2006 [hereinafter *Full Court Press*], at 128 ("The rocky season hit a low point last June when the team had to shut down its regional sports channel, C-SET. Time Warner had insisted that C-SET be carried as a premium digital service instead of Expanded Basic cable, which reduced its reach to only 600,000 homes, less than half the market."). Andrew Shain, et. al, *Bobcats Shut Off Their TV Network; Citing Lack of Viewers, Team Pulls Plug on C-SET after a Year,* CHARLOTTE OBSERVER, Jun. 29, 2005, 1C ("C-SET debuted on Time Warner digital cable systems in the Carolinas in October. Digital cable attracts about 40 percent of subscribers and costs $15 more a month than more-popular standard cable in Charlotte.").

47. Rick Bonnell, *Network to Feature Bobcats, Region Teams; New TV Outlet will be only on Digital Cable,* CHARLOTTE OBSERVER (NC), Mar. 11, 2004, 1C.

48. *Id.* ("Failing to meet its audience and advertising goals, the Charlotte Bobcats will pull the plug on their regional sports network Thursday after a less than a year.").

49. Jefferson George & Rick Bonnell, *Deals Widen Bobcats' TV reach,* CHARLOTTE OBSERVER, Apr. 9, 2008, D1.

50. *Id. See also Full Court Press, supra* note 46("The team has a new cable TV deal with Time Warner, which allows it to reach 1.4 million subscribers and brings in an estimated $8 million a year.").

E. The Theory of Exclusionary Conduct Applies to Comcast and the Sports Programming Industry

38. In this section, I apply the economic framework developed above to this case. This theory of anticompetitive harm applies here because (1) scale economies exist in the production of national sports programming and the associated sale of advertising during that programming and (2) highly penetrated tiers are the most efficient distribution channels for engaging in those two activities.

1. There Are Large Economies of Scale in the Production of National Sports Programming and the Associated Sale of Advertising During that Programming

39. Sports programming exhibits large economies of scale. After the sports programmer acquires the distribution rights to live sporting events (a large sunk cost), the cost of supplying that content to one subscriber is nearly the same as the cost of supplying that content to one million subscribers. Stated differently, the incremental cost to a network of supplying sports programming to additional viewers is close to zero. Other significant costs in supplying sports programming, including hiring crews and purchasing cameras and other equipment, are properly characterized as fixed costs. Accordingly, there are large economies of scale in the production of sports programming—that is, the average cost of supplying programming declines as the number of subscribers increases.

40. There are also large economies of scale in the sale of national advertising by national programming networks such as NFL Network.[51] A review of the economic literature

51. At least one study suggests that national advertising is a separate product market from local advertising. A large price disparity exists between local and national advertising rates, suggesting that a collection of local advertising slots is not a close substitute to a national advertisement. *See* Michael Porter, *Interbrand Choice, Media Mix and Market Performance*, 66 AM. ECON. REV. 398, 403 (1976). Duplicating the reach of a national advertising slot by purchasing local advertisements has been shown to be as much as 10 times more expensive. Even at the low end of the pricing disparity, advertisers still receive a 30 percent discount by using a national advertising scheme over multiple lower cost advertisements. *Id.*

suggests that the scale economies associated with national television advertising are significant. Advertisers can receive better returns by advertising with larger audiences, and as a result, advertising rates generally increase with audience size.[52] For example, Comcast indicates that it enjoys economies of scale in the sale of advertising. As a result of a recent merger of its Versus and Golf Channel ad sales staffs, Comcast Sports Sales has extended its reach by selling ads seen by more viewers.[53] Comcast advertising sales President David Cassaro recently noted that this strategy "has yielded more sales."[54]

41. Thus, by excluding NFL Network from its Expanded Basic tier, Comcast can prevent a programming rival from enjoying scale economies, thereby causing the rival to operate at higher costs. Comcast's decision to relegate NFL Network to a premium sports tier, thereby reducing the availability of NFL Network to Comcast subscribers from 8.6 million to 1.4 million, prevented NFL Network from exploiting the significant economies of scale in advertising and programming described above.[55] As a result, NFL Network is forced to operate at a level that corresponds to the inelastic portion of its demand curve, where a decrease in price (and a corresponding increase in output) would otherwise increase its profits. Accordingly, NFL

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52. *See, e.g.*, Johan Arndt & Julian L. Simon, *Advertising and Economics of Scale: Critical Comments on the Evidence*, 32 J. IND. ECON. 229, 231-2 (1983); Dong Chen & David Waterman, Vertical Foreclosure in the U.S. Cable Television Market: An Empirical Study of Program Network Carriage and Positioning, Oct. 2005, at 7. Advertisers may also consider factors such as the season and time of day. But these factors are not affected by Comcast's tiering decision.

53. Jon Show & John Ourand, *Comcast Combines Versus, Golf Channel Sales Efforts*, STREET & SMITH'S SPORTS BUSINESS JOURNAL, Jan. 26, 2009, page 03 ("Comcast is combining the national sales teams of Versus and Golf Channel under the Comcast Sports Sales banner, which will be led by advertising sales president David Cassaro...Golf Channel, which is in 82 million homes, was the last Comcast sports network with an independent sales team. Versus is in 74 million homes. Cassaro said there were companies that already advertise across both networks [Versus and the Golf Channel], and that the multiplatform offering 'has yielded more sales,' though he wouldn't name names.").

54. *Id.*

55. Declaration of Frank Hawkins, May 2, 2008 [hereinafter *Hawkins Declaration*], ¶ 18 ("Although the NFL Network was originally available to about 8.6 million subscribers on the digital basic tier, it became available to only 1.4 million Comcast household subscribers to the premium sports tier after the drop.").

Network cannot impose the same degree of price discipline in the relevant programming and advertising markets as it could absent the exclusionary conduct.

2. The Expanded Basic Tier of a Cable Operator's Network Is the Most Efficient Distribution Channel in the Production of National Sports Programming and the Associated Sale of Advertising During Sports Programming

42. The social benefits (efficiencies) of aggregating disparate programs on the Expanded Basic tier are well known.[56] There are also substantial private benefits to networks associated with carriage on the Expanded Basic tier. Carriage on the Expanded Basic tier grants a programmer access to a substantial majority of an MVPD's subscribers, making it the most efficient distribution channel available to most networks.[57] In contrast, carriage on less broadly penetrated tiers grants a programmer access only to a smaller subset of an MVPD's subscribers (meaning that the D2 tier is less efficient than the Expanded Basic tier and that the the premium sports tier is even less efficient).

43. After a network has been relegated to a premium tier, its subscribership plummets. Although it may be possible to reclaim a certain percentage of former subscribers who have a strong preference for the programming, a confluence of factors ensures that the conversion—that is, the incremental promotional efforts—will be costly. And it is precisely this incremental selling cost (with no offsetting benefit) that makes the Expanded Basic tier the most efficient distribution channel for a network. *First*, the distributor controls the surcharge that the subscriber faces if he or she wants to maintain the displaced programming. In this case, Comcast charges its subscribers at least an additional $7 per month to view NFL Network, which is a

56. *See, e.g.*, Thomas Hazlett, Shedding Tiers For A La Carte? An Economic Analysis Of Cable TV Pricing, George Mason University School Of Law Working Paper (2006) (explaining that bundling is highly efficient because it reduces transaction costs and prices marginal viewing choices exactly at their marginal cost—namely, zero).

57. The Basic or "lifeline" tier, although it may be more efficient, is not available to most networks.

significant penalty in relation to the Expanded Basic monthly subscription fee. *Second*, even if some viewers would be willing to pay more than $7 per month to view NFL Network (along with the other channels on the same premium tier), many viewers will not be aware of the existence of NFL Network or the nature of the programming available on NFL Network. NFL Network is an "experience good"—it is impossible to gain that experience if the network is available only on the premium tier.[58] For these reasons, the incremental promotional efforts needed to reclaim lost subscribers due to Comcast's conduct are economically significant. If NFL Network were to try to reclaim such subscribers, it would have to educate them on the nature of its content (without their being able to sample it) and then convince them that said content is worth spending at least $7 more per month. Although NFL Network has been somewhat successful in these efforts—as of November 2008, of Comcast subscribers (or) had added the sports tier since Comcast moved NFL Network to that tier[59]—Comcast reaps an outsized gain from NFL Network's costly efforts to overcome Comcast's discrimination. Because the Expanded Basic tier affords a programmer access to the distributor's subscribers at no incremental selling expense, the Expanded Basic tier is the most efficient distribution channel for distributing programming and for selling advertising.

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58. The idea of "experience goods" dates back to a 1970 paper showing that it was more difficult to determine utility associated with quality than with price and that certain goods must be used before a determination on utility can be determined. *See* Philip Nelson, *Information and Consumer Behavior*, 78 J. POL. ECON. 311 (1970). Since then, experience goods have been formalized to be goods for which consumers do not know their preferences before consumption. This concept has been applied to a variety of industries, most notably retail goods including electronics, appliances, clothing, food, and toys. *See* Yeon-Koo Che, *Customer Return Policies for Experience Goods*, 44 J. IND. ECON. 17, 18 (1996); Douglas Gale & Robert Rosenthal, *Price and Quality Cycles for Experience Goods*, 25 RAND J. ECON. 590 (1994); Carl Shapiro, *Optimal Pricing of Experience Goods*, 14 BELL J. ECON., 497 (1983).

59. When Comcast first moved the NFL Network to its Premium Sports Tier, only 1.4 million subscribers viewed the NFL Network. In November 2008 there were approximately Comcast subscribers to the NFL Network, implying an increase of

See Hawkins Declaration, supra note 55, ¶ 18. *See also NFL Subscriber Report by MSO* (Top 10 MSOs), NFL NETWORK (2009).

44. In addition to the incremental selling expenses associated with movement from a highly penetrated tier (Expanded Basic or Digital) to a premium tier, a programmer loses the advertising revenues associated with former subscribers on a broadly penetrated tier. As explained above, advertising revenues serve to defray the incremental variable costs of running a cable network. Thus, depriving a rival of incremental advertising revenues via an adverse carriage decision has the same economic effect as raising a rival's costs.

45. Indeed, Comcast itself recognizes the value of gaining access to a distributor's Expanded Basic tier. According to the Dish Network, Comcast blacked out NHL games on Comcast's Outdoor Life Network (OLN, now known as Versus) when Dish refused to capitulate to Comcast's 40 percent subscriber-penetration demands—that is, Comcast demanded that Dish Network carry OLN on a tier to which at least 40 percent of Dish's customers subscribed.[60] Comcast took the position in 2005 that national sports programming should *not* be relegated to poorly penetrated tiers. A spokesperson for OLN promoted the network's hockey programming by stating that "[h]ockey is a major sport that deserves to be seen as other major sports are on a broadly distributed tier."[61] This is even more true for NFL football because it is even more popular than NHL hockey. It is noteworthy that although Comcast demanded a 40 percent penetration rate for Versus, and although football is far more of a "major sport" than hockey, Comcast itself *never* carried NFL Network at a 40 percent or greater penetration rate.[62]

F. The Resulting Harm to Enterprises

46. As the largest MVPD in the nation, Comcast's foreclosure of NFL Network from Comcast's broadly penetrated tiers (including both Expanded Basic and D2) is presumptively

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60. *See* Echostar Comments, Dec. 23, 2005, at 3-5.
61. *EchoStar pulls OLN after failing to show NHL games*, ASSOCIATED PRESS, Oct. 20, 2005.
62. *See NFL Subscriber Report by MSO* (Top 10 MSOs), NFL NETWORK (2009).

anticompetitive even under a traditional share-based approach to analyzing foreclosure.[63] A potentially relevant geographic market for analyzing Comcast's conduct is the nation, as NFL Network may sell its programming to MVPDs across the country. Comcast controlled 22 percent of all nationwide MVPD subscribers in June 2006.[64] Comcast controls a significantly greater share of national MVPD subscribers than does the next largest MVPD, DirecTV.[65] To the extent that the relevant geographic markets consist of only those areas with an interest in NFL games—in particular, the DMAs associated with the 32 local NFL franchises—the share of the market that Comcast forecloses through its carriage decision may be even higher than 22 percent. To use one example of a DMA with a professional football franchise (the Philadelphia Eagles), as of 2005, Comcast controlled almost 60 percent of all television households (and a larger share of MVPD households) in the Philadelphia DMA.[66] In this section, I identify specific harm to NFL Network caused by Comcast's exclusionary conduct.

1. Enterprises's Advertising Revenues Have Been Impaired as a Result of Comcast's Exclusionary Conduct

47. In addition to the incremental promotional expenses identified above, NFL Network incurs additional costs due to Comcast's exclusionary conduct in the form of lost advertising revenues that it would have earned absent the exclusion. Because the number of potential viewers increases with a network's subscribers, by reducing the number of Comcast's

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63. *See* PHILLIP AREEDA, IX ANTITRUST LAW 375, 377, 387 (Aspen 1991) (indicating that 20 percent foreclosure is presumptively anticompetitive); *See also* HERBERT HOVENKAMP, XI ANTITRUST LAW 152, 160 (indicating that 20 percent foreclosure and an HHI of 1800 is presumptively anticompetitive).

64. In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Thirteenth Annual Report, MB Dkt. No. 06-189, released Jan. 16, 2009, at 146 Table B-3.

65. *Id.* (showing DirecTV with a 16 percent share of national MVPD subscribers).

66. *See, e.g.,* In the Matter of Applications for Consent to the Assignment and/or Transfer of Control of Licenses, MB Dkt. No. 05-192, Memorandum Opinion and Order, released July 21, 2006 [hereinafter *Adelphia Order*], at *54 fn. 400 ("Specifically, Comcast asserts that there would be no significant change in concentration within the footprints of CSN West and CSN Chicago (remaining at 23% and 20% of TV households, respectively), a three percentage point increase in Philadelphia (53% to 56% of TV households), a four percentage point increase in the Southeast (16% to 20% of TV households), and an eight percentage point increase in the Mid-Atlantic (30% to 38% of TV households).").

subscribers that receive NFL Network, Comcast's placement of NFL Network on a poorly distributed tier reduced NFL Network's potential viewers, and as result, decreased NFL Network's advertising revenues.

2. Enterprises's Licensing Revenues Are Reduced as a Result of Comcast's Exclusionary Conduct

48. By reducing the number of paid NFL Network subscribers, Comcast's conduct also reduced the total license revenues that NFL Network would have earned. As of May 2008, NFL Network had only 36 million subscribers.[67] This is a fraction of the 73 million subscribers who receive the Golf Channel or the 66 million subscribers who receive Versus, both of which are carried on Comcast's Expanded Basic tier.[68] Following Comcast's decision to move NFL Network to its premium sports tier, the number of Comcast customers who received NFL Network fell from 8.6 million to 1.4 million.[69] Like advertising rates, the reduction in monthly licensing revenues for NFL Network can be calculated as the difference between in licensing revenues when NFL Network was carried on the *D2 tier* (equal to the product of per subscriber per month on the D2 tier and 8.6 million D2 subscribers)[70] and in revenues when NFL Network is carried on the *premium sports tier* (equal to the product of per subscriber on the premium sports tier and 1.4 million premium sports tier subscribers),[71] or nearly dollars per month.

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67. *Hawkins Declaration, supra* note 55, ¶ 2 ("According to the League's most recent statistics, the NFL Network is currently delivered to approximately 36 million homes nationwide.").

68. COMCAST CORP. 2008 ANNUAL REPORT (SEC FORM 10-K), Feb. 20, 2009, at 7 [hereinafter *Comcast 2008 10-K*].

69. *Hawkins Declaration, supra* note 55, ¶ 18 ("Although the NFL Network was originally available to about 8.6 million subscribers on the digital basic tier, it became available to only 1.4 million Comcast household subscribers to the premium sports tier after the drop.").

70. *See* Table 14, *infra*.

71. :

3. Reduced Ability to Compete for Sports Programming

49. NFL Network competes against Comcast and other programmers for sports programming. For example, NFL Network was recently not considered for a package of games offered for sublicense by Fox Sports Net (FSN) on behalf of the Pac-10 college football conference.[72] The low number of cable subscribers who receive NFL Network was a factor that disqualified NFL Network from consideration.[73] Instead, in June 2007—just as Comcast was beginning to move NFL Network to the premium sports tier—FSN sublicensed the games to Versus, which had 64 million subscribers at the time.[74] This example demonstrates that NFL Network is impaired in its ability to compete effectively for sports programming as a result of Comcast's discriminatory conduct. Not only does this impairment harm NFL Network, Comcast's exclusionary conduct redounds to the harm of non-NFL content owners, who enjoy less vigorous competition among rival programmers for the rights to their content. In an industry with just a handful of competent bidders, a more robust bidder would ensure that the Pac-10 and other conferences enjoy higher prices for their content.

G. The Resulting Harm to Viewers and Advertisers

50. As explained above, Comcast's exclusion of NFL Network from widely penetrated tiers resulted in harm to viewers and advertisers because NFL Network was deprived of economies of scale and denied access to the most efficient distribution channel for its programming (and the associated sale of advertising). In this section, I identify the specific ways in which this consumer harm manifests itself, beginning with a description of the harm to viewers.

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72. *Hawkins Declaration, supra* note 55, at ¶ 20.
73. *Id.*
74. John Consoli, *FSN, Versus Ink College Football Game Deal*, MEDIAWEEK, June 6, 2007.

1. Harm to Viewers

51. Comcast's refusal to carry NFL Network on a broadly penetrated tier causes harm to consumers in several ways, including (1) increased expenditures for consumers who choose to subscribe to NFL Network, (2) higher expenditures to watch rival sports programming (including that owned by Comcast), and (3) a decrease in the option value associated with being able to watch previously undiscovered programming.

a. Higher Expenditures to Watch NFL Network

52. Moving NFL Network to a premium tier harmed any Comcast subscriber interested in receiving NFL Network. The viewers most harmed were those who value NFL Network, but only at a price less than the Comcast-determined price necessary to subscribe to the premium tier content. Those viewers decided not to purchase NFL Network and lost the entirety of the enjoyment that they would have received from viewing this content.

53. The second group of consumers harmed are those who purchase NFL Network on the premium tier. Although they still receive some surplus from consuming NFL Network, it is less than the surplus they would experience if NFL Network were carried on the Expanded Basic tier. Most of the reduction in this group's surplus is transferred to Comcast in the form of revenues from premium tier subscriptions.

b. Higher Expenditures to Watch Rival Sports Programming

54. Consumers are further harmed due to higher expenditures for rival sports programming. By weakening NFL Network's ability to compete for inputs (for example, college football programming) and advertisers, Comcast has ensured that rival sports programming networks, including those owned by Comcast, have increased market power vis-à-vis MVPDs and an increased ability to raise subscription prices. NFL Network constrains the market power

of these rival programmers, and without its price-disciplining effect, rival networks can increase the prices they charge to MVPDs.

c. Decreased Advertising Revenues Implies Higher Subscription Fees in a Two-Sided Platform

55. NFL Network connects two groups of consumers: advertisers and viewers. For this reason, NFL Network creates what economists refer to as a two-sided market.[75] NFL Network could, if it chose, restrict the number of subscribers to its content by charging a high subscription price for its programming. In this manner, NFL Network would operate in a manner similar to premium cable channels such as HBO or Cinemax. NFL Network is different from these other content providers, however, in that NFL Network generates a significant portion of its revenues from advertising.[76] Furthermore, advertisers pay a premium for the ability to reach all, or very close to all, media markets in the United States. For this reason, NFL Network prefers to charge a lower price to subscribers so that it can profit from the network effect created by connecting viewers with advertisers—an effect that advertisers value and are willing to pay for.

56. The overall effect of pricing within the two-sided market created by NFL Network is that all parties win. Consumers' subscriber fees are heavily subsidized by advertising revenues. Advertisers have nationwide reach, which creates great value for them, and NFL Network makes a profit on the content that it provides to the market. Significant consumer harm is created, however, if NFL Network is relegated to an MVPD's premium tier: Advertisers will

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75. *See* Jean Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EURO. ECON. ASS'N. 990 (2003) [hereinafter *Platform Competition*]; Wilko Bolt & Alexander F. Tieman, Social Welfare and Cost Recovery in Two-Sided Markets, IMF Working Paper WP/05/194 (2005); Howard Chang, David S. Evans, & Daniel D. Garcia Swartz, *The Effect of Regulatory Intervention in Two-Sided Markets: An Assessment of Interchange-Fee Capping in Australia*, 4 REV. NETWORK ECON. 328 (2005).

76. The likely reason why MVPD subscribers are willing to pay a premium to watch networks like HBO and Showtime is the *absence* of commercials. Because sports programming networks offer programming that is, by necessity, interrupted by timeouts, their programming is not as conducive to carriage on the premium tier.

be unwilling to pay advertising fees consistent with a reach of NFL Network to all subscribers in that MVPD's service territory. Without those advertising fees, the NFL will be unable to subsidize the price of NFL Network, and the subscription price of NFL Network to consumers will increase.

d. The Option Value of Watching NFL Network for Comcast's Non-Premium Subscribers Has Been Destroyed

57. By moving NFL Network from the D2 tier to the premium sports tier, and by foreclosing NFL Network altogether from the Expanded Basic tier, Comcast has destroyed the option value of watching NFL Network. This option value is best described as the value to a viewer of having content available in the event that no superior content exists at that particular time. Viewers who have access to NFL Network only as premium content for which an additional payment is required may, due to lack of full information, decide to pass on that content when they would have developed a demand for it were it offered on a broadly penetrated tier.

58. Not all television viewers have set viewing patterns or preferences. A certain percent of viewer hours are spent watching content that is selected by "channel surfing"—that is, briefly scanning content to determine the best available option at that particular time. For this reason, it is valuable for viewers to have a bundle of channels available to them, even if they have not regularly viewed some of those channels in the past. Content on NFL Network lends itself to this type of viewing. For example, a portion of NFL Network's content is comprised of NFL games replayed from prior seasons or prior weeks within the current season. Although a viewer is unlikely to value watching that content as much as he would value watching a live NFL game, if he is a football fan, his value for watching replayed NFL games is likely significant and relatively constant over time.

59. A second instance in which NFL Network content has a significant option value to viewers is during unique viewing events or after a significant NFL game, such as a playoff game or the Super Bowl. For example, the NFL Draft, which is televised as a two-day event every year, receives very high ratings, particularly for the early rounds. Currently, only ESPN and NFL Network provide live, full-day coverage of the NFL Draft. As a result, certain viewers may get their first taste of NFL Network by watching coverage of a specific event, such as the NFL Draft. Upon viewing the coverage of this event, the viewer may update his expectations of NFL Network in general, and begin to watch it more frequently. Put simply, viewers who have access to NFL Network only as premium content for which an additional payment is required may, due to lack of full information, decide to pass on that content when they may have developed a demand for it were it offered on a broadly penetrated tier.

2. Harm to Advertisers

60. A second group of consumers that are adversely affected by Comcast's discriminatory conduct are advertisers.

a. Higher Prices to Advertise on Comcast-Affiliated Sports Networks

61. By relegating NFL Network to a premium tier, Comcast has depressed advertisers' demand for commercials on NFL Network, thereby undermining price competition for advertisers. Advertisers seek the largest footprint possible for their advertisements, and any diminution in a programmer's footprint will reduce the value of an advertisement on that network. Golf Channel is presently available to 73 million households and Versus is presently available to 66 million households.[77] As a result of Comcast's discriminatory conduct, NFL Network reaches only 36 million households and its ability to close the gap has been

77. *Comcast 2008 10-K, supra* note 68, at 7.

substantially diminished.[78] Through its discriminatory conduct, Comcast has therefore created an artificial advantage in the sale of advertisements to national advertisers. It follows that NFL Network cannot constrain Versus's and the Golf Channel's advertising rates as effectively as it could when NFL Network was carried on Comcast's D2 tier. Accordingly, Versus's and Golf Channel's advertising rates should increase as of result of Comcast's discriminatory conduct.

b. Higher Quality-Adjusted Prices to Advertise on NFL Network

62. Not only does Comcast's conduct harm advertising customers of Versus and the Golf Channel, it also harms advertising customers of NFL Network. As explained above, Comcast's conduct has raised NFL Network's costs by increasing its selling costs and decreasing its scale. Economic theory dictates that higher variable costs translate into higher prices in the short run. Indeed, in a perfectly competitive industry, marginal cost increases are passed on dollar-for-dollar to consumers. Even if NFL Network defies economic theory and holds its advertising rates steady, the fact that its footprint has contracted significantly implies that, on a quality-adjusted basis, advertisers are paying higher rates to advertise on NFL Network.

II. THE FAIR MARKET VALUE OF CARRIAGE OF NFL NETWORK PROGRAMMING ON COMCAST'S EXPANDED BASIC TIER IS REFLECTED IN THE RATES THAT COMCAST'S MVPD RIVALS HAVE VOLUNTARILY AGREED TO PAY NFL NETWORK

63. In this section, I analyze the carriage contracts between NFL Network and nine other MVPDs. These data provide a reasonable estimate of the fair-market value of the carriage of NFL Network programming on Comcast's Expanded Basic tier. These contracts reflect the price that a reasonable buyer and seller would agree to in the absence of anticompetitive conduct. I use a standard regression analysis to infer the price that Comcast, absent the challenged conduct, would and should pay NFL Network based on the relationship between various contract

78. *Hawkins Declaration*, *supra* note 55, ¶ 2 ("According to the League's most recent statistics, the NFL Network is currently delivered to approximately 36 million homes nationwide.").

parameters (for example, an MVPD's NFL Network subscribers, the length of the contract, and the type of the MVPD service) and each MVPD's Net Effective Rate ("NER"). Using this approach, I estimate the NER that would emerge, absent Comcast's challenged conduct, in a hypothetical transaction between NFL Network and Comcast.

64. I also analyze the terms of the actual contract negotiated between Comcast and NFL Network. This contract contains information relevant to the determination of the fair-market value of carriage of NFL Network programming because it was consummated before Comcast placed NFL Network on a tier less-penetrated than the tier on which it placed Comcast-affiliated programming (Versus and the Golf Channel)—that is, before Comcast engaged in the challenged conduct. Accordingly, the negotiated price is less likely to be biased by Comcast's subsequent discriminatory conduct than a contract consummated after Comcast placed NFL Network on a less-penetrated tier than its affiliated programming. The contracted NER corroborates the range predicted by my regression analysis.

A. Federal Authorities Have Already Defined the Proper Fair-Valuation Approach

65. Federal authorities have prescribed specific guidelines that inform the proper fair-market value of sports programming. For example, the independent arbitrator in *TCR Sports v. Time Warner* adopted my application of the *Adelphia Order* criteria to that case.[79] This method was reaffirmed by the FCC's Media Bureau in its October 2008 *Order on Review* in *TCR Sports v. Time Warner*, when it determined that "the best and most persuasive evidence of fair market value is the objective price that [sports network] programming yields in the marketplace."[80] The best price evidence is provided by "current or previous contracts between MVPDs and [sports

79. *See* In the Matter of TCR Sports Broadcasting Holdings, LLP, v. Time Warner Cable, Inc., Case No. 12 494 E 000326 07, Declaration of Allan T. Ingraham and Hal J. Singer, May 8, 2008.
80. *Order on Review*, *supra* note 8, ¶46.

networks] in which...[the MVPD does] not have an interest."[81] To an economist, the Media Bureau was correct to conclude that arms-length contracts between other MVPDs and a sports network are "the best and most persuasive evidence of fair market value."[82] Accordingly, I devote considerable attention to an analysis of the contracts between NFL Network and other multi-channel video distributors (MVPDs). The pricing data from those contracts represent the market-determined rate for NFL Network programming. To corroborate this evidence, I also consider the existing contract between Comcast and NFL Network.[83]

B. The Rates Paid by Other MVPDs for Carriage of NFL Network Programming Inform the Fair-Market Value of Carriage of NFL Network Programming on Comcast's Expanded Basic Tier

66. In its *Order on Review* of the arbitrator's decision in *TCR Sports v. Time Warner*, the FCC's Media Bureau explained the importance for assessing fair-market value of the voluntary rate paid for the subject programming by other MVPDs:

> Contrary to TWC's assertions, we find that the carriage decisions of four of the largest MVPDs operating in North Carolina—that serve the overwhelming majority of non-TWC subscribers to paid television service in North Carolina—*are an appropriate reference point for assessing fair market value*. We reject TWC's assertion that MASN's carriage on a widely available tier by DirecTV and Echostar [Dish Network] bear no significance

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81. *Id.* n.178 (citing the *Adelphia Order, supra* note 66, at Appendix B.4.c.). I cite the most important factor, Factor 1. This factor was also enumerated in the Commission's order approving News Corp.'s acquisition of DIRECTV. In the Matter of General Motors Corporation and Hughes Electronics Corporation, Transferors, and The News Corporation Limited, Transferee, For Authority to Transfer Control, Memorandum Opinion and Order, MB Dkt. No. 03-124, released Jan. 14, 2004, at 82 [hereinafter *News Corp. MO&O*].

82. To borrow one analogy, it would be foolish to ignore the price of my neighbors' homes that sold within the last six months when valuing the price of my home—especially if my neighbors' homes are similar to or identical to my home. In the instant case, programming on the NFL Network carried by DIRECTV or Dish Network is *identical* to the programming that would be carried by Comcast on Comcast's Expanded Basic tier but-for Comcast's discriminatory conduct.

83. This complementary analysis conforms to Factor 3 as noted in the *Adelphia Order*. *See Adelphia Order, supra* note 66, Appendix B.4.c.). After Factor 1, Factor 3 provides the most direct evidence of the actual market price of NFL Network programming. I interpret the phrase "before . . . [the MVPD] acquired control of the systems swapped and acquired in the Adelphia transactions" to mean *before* the vertically integrated cable operator engaged in the challenged conduct. I understand that any offers discussed between the parties to a carriage dispute *after* the challenged conduct cannot inform fair-market valuation because such offers could be biased (typically in favor of the vertically integrated cable operator) by the challenged conduct. *See News Corp. MO&O*, *supra* note 81, at 82 ("The arbitrator may not consider offers prior to the arbitration made by the MVPD and News Corp. for the programming at issue in determining the fair market value.").

> because DBS operators possess different economic motivations from cable operators that are derived from differences in cost structure and technology. MASN presented testimony that the actions of these carriers—two of TWC's most direct competitors in North Carolina—offer a more appropriate meter for gauging programming demand than those of smaller cable operators because they provide service throughout the state, rather than to scattered pockets of subscribers like the smaller cable operators that TWC cites.[84]

By extension, the carriage decisions of the largest MVPDs operating in Comcast's territories throughout the United States are "an appropriate reference point for assessing fair market value" here. Consider, for example, the two MVPDs cited by the Media Bureau in *TCR Sports vs. Time Warner*: DirecTV and Dish Network. DirecTV and Dish Network agreed to pay NFL Network NERs for 2008 of approximately and per subscriber per month, respectively, to carry NFL Network on tiers reaching at least percent of their respective subscribers.

67. In addition to DirecTV and Dish Network, NFL Network has signed numerous affiliation agreements with other MVPDs. The MVPDs in the sample are

which together account for approximately

non-Comcast NFL Network subscribers in 2008.[85] In my judgment, this sample is sufficient to provide a reliable assessment of fair-market value. NFL Network's other contracts with MVPDs cover very few subscribers.[86]

68. NFL Network's affiliation agreements include several components that together form the NER paid by the MVPD to NFL Network.

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84. *Order on Review*, *supra* note 8, ¶47 (citations omitted) (emphasis added).

85. According to internal NFL Network estimates, there were non-Comcast NFL Network subscribers on July 31, 2008. My sample includes Thus, the subscribers account for approximately

86. Specifically, I limit my analysis to MVPDs that served more than NFL Network subscribers in 2008.

Table 8 lists the individual 2008 NERs to be paid under each current contract in the sample and the average rate across all contracts in the sample in 2008.

TABLE 8: CURRENT NFL CONTRACTS WITH MVPDS OTHER THAN COMCAST

MVPD	2008 Net Effective Rate ($/subscriber month)	2008 NFL Network Subscribers*
Simple Average**		

Source: NFL Network; Empiris estimate

Note: †

* Through 11/31/2008
** ;

As Table 8 shows, the arithmetic (simple) average rate in 2008 across all MVPDs in the sample that receive the eight-game package programming is per subscriber per month.

87.

Regression analysis begins with the simple average rate (   ), and it attempts to provide a better estimate based on the characteristics of the particular out-of-sample observation (in this case, Comcast).[88] In this case, the purpose of the regression model is to make a prediction about an MVPD that is not in the sample (this is also called an "out-of-sample prediction").

69. I employ a common statistical approach used in economics to calculate the fair-market value of Comcast's carriage of NFL Network programming on Comcast's Expanded Basic tier by considering the rates and other pertinent terms agreed to in arms' length transactions between NFL Network and other MVPDs. Specifically, I use a hedonic-price model estimated with the Ordinary Least Squares (OLS) regression method.[89] Hedonic price models are commonly used to determine the relative value of several attributes that together make up an integrated good that has a single price.[90] For example, hedonic models are often used in housing economics to determine how the size of a house, the number of bedrooms, the number of bathrooms, and other factors affect the price of the house. NFL Network contracts are like a house in that several components—including the length of the contract, carriage level, and the number of subscribers reached—do not have their own prices but collectively determine the net price that the MVPD is willing to pay and the net price that NFL Network is willing to accept. The value of NFL Network programming affects the fair-market value of carriage, but because it

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88. Note that an out-of-sample regression method attempts to use information gleaned from all observations *other than the observation whose value one seeks to predict.* In the instant case, I seek to use information gleaned from all sample observations *other than Comcast* to predict the price that Comcast would pay for carriage of the NFL Network in a transaction absent discrimination or the threat of discrimination. Regression analysis begins with the simple average rate because that is the value one would apply to Comcast if one knew only the prices other MVPDs pay for carriage of the NFL Network. Regression analysis is an attempt to improve upon this simple method by including additional information that may be relevant.

89. Ordinary least squares is one of, if not the most, commonly used methods of statistical analysis in the field of economics. *See, e.g.*, George G. Judge et al, THE THEORY AND PRACTICE OF ECONOMETRICS 15 (Wiley and Sons 2d ed., 1985) ("Therefore, for the linear rule (2.1.4), the least squares estimator is equal to or better in terms of sampling precision than all others in its class. This is a beautiful result, which does much to explain the popularity of the least squares rule.").

90. *See, e.g.*, Sherwin Rosen, *Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition*, 82 J. POL. ECON. 34-55 (1974).

comes in only two "flavors"—with or without the eight-game package programming—this factor can be easily controlled. Furthermore, eight of the nine MVPDs in my sample (all MVPDs except [redacted]) receive the same programming (NFL Network *with* the eight-game package programming). I control for the quality of the programming—and its effect on the fair-market value—in my model.

70. I consider several important characteristics that vary from contract to contract. For example, I consider the length of the agreement, the number of MVPD subscribers that receive NFL Network, the carriage level, the presence of an MFN, the duration of the contract after 2009, and whether the eight-game package programming was offered at a particular time. Some of these factors, such as the number of MVPD subscribers, exhibit a non-linear relationship with the dependent variable—that is, their relationship with the price per subscriber per month is not best described by a straight line.[91] Formally, the following model gives the relationship between the price of NFL Network and the variables that explain that price:

$$[1] \quad P = f(Subscribers, ContractYear, Package, MFN, HighPenetration, Duration, Year)$$

where *Subscribers* is the natural log of the number of NFL Network subscribers on a particular MVPD for a particular year, *Contract Year* is the number of years since the first paying year of the contract between the MVPD and NFL Network, *Package* is a discrete variable equal to one when the MVPD pays for and receives the eight-game package programming, *MFN* is a discrete variable equal to one if an MVPD enjoyed a Most Favored Nation clause in its carriage agreement with NFL Network, *High Penetration* is a discrete variable equal to one if an MVPD has agreed to carry NFL Network programming on a tier reaching at least 80 percent of its total cable subscribers, *Duration* is a discrete variable equal to one if an MVPD has agreed to a

91. *See, e.g.*, JEFFREY M. WOOLDRIDGE, INTRODUCTORY ECONOMETRICS: A MODERN APPROACH 41-46 (South-Western Cengage Learning 4th ed. 2009).

carriage agreement with NFL Network that extends beyond December 2009, and *Year* is a vector comprised of three discrete variables that account for each year in the sample.[92] Table 9 provides descriptive statistics of the independent variables used in the regression. The sample includes 39 contract-year observations covering nine MVPDs and four years (2005-2008).[93]

TABLE 9: DESCRIPTIVE STATISTICS OF INDEPENDENT VARIABLES

Variable	N	Mean	Standard Deviation	Min	Max

Note: See fn. 93 for a discussion of why the fixed effects (Y2005, Y2006, and Y2007) have different mean values.

Note that as an out-of-sample analysis, Table 9 does not include Comcast observations.

71. A potentially important variable is the number of subscribers for the MVPD in question. Holding all other factors constant, one may expect to observe a negative correlation between MVPD subscribership and price because revenue enhancements or cost savings enjoyed by the MVPD, the network, or both may affect the final carriage price. Furthermore, an MVPD

92. Specifically, *Year* is comprised of indicator variables for 2005, 2006, and 2007, with an implied base year of 2008. Note that, because a few MVPDs do not have a 2005 observation and several MVPDs have two 2006 observations (pre-surcharge and post-surcharge), the number of observations in each year varies.

93.

with many subscribers will have greater bargaining power than one with few subscribers. The extent to which *P* decreases for a given increase in *Subscribers*, however, should become smaller as *Subscribers* increases because the increase in the MVPD's bargaining power vis-à-vis NFL Network (and the revenue enhancements or cost savings) should not increase proportionately to an increase in subscribers. Other factors, such as Most Favored Nations (MFN) clauses, suggest that subscriber size should play a limited role in determining *P*.[94]

72. Figures 1 and 2 demonstrate how linear (Figure 1) and linear-logarithmic (Figure 2) specifications fit the subscriber data for MVPDs that receive eight-game package programming.[95] Note that the linear model would, for a sufficiently large MVPD, predict a *negative* price per subscriber per month. The linear-log model, in contrast, is asymptotic and thus would predict prices that trend toward zero—but never reach zero—for increasingly large MVPDs.[96]

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94. Note that I consider the *presence* of an MFN in a contract rather than the active use of an MFN.

95. Note that the univariate models between price and subscribership would not control for whether an MVPD takes the eight-game package programming. As noted earlier, 8 of the 9 MVPDs in my sample do take the eight-game package programming (and consequently pay a higher rate). To produce an "apples-to-apples" comparison for this narrow univariate model, I exclude the one MVPD ( ) that does not carry (or pay for) the eight-game package programming. Note, however, that is included in the multivariate regression used to generated the predicted rate because this larger model can control for differences in programming that cannot be controlled by the univariate regression.

96. The asymptotic nature of the linear-logarithmic model ensures that an increase in MVPD NFL Network subscribers will never imply a negative price. That is, the y-value of a linear-logarithmic function trends approaches zero (but never reaches zero) as the x-value increases. It instead becomes an increasingly small positive value. *See, e.g.*, JAMES H. STOCK & MARK W. WATSON, INTRODUCTION TO ECONOMETRICS 209-214 (Addison-Wesley 2003) (describing logarithmic functions and regressions).

FIGURE 1: LINEAR FIT BETWEEN PRICE AND TOTAL MVPD NFL NETWORK SUBSCRIBERS IN SAMPLE, 2008

Note: N = 8, Adjusted R-squared = 0.50

FIGURE 2: LINEAR-LOGARITHMIC FIT BETWEEN PRICE AND TOTAL MVPD NFL NETWORK SUBSCRIBERS IN SAMPLE, 2008

Note: N = 8, Adjusted R-squared = 0.78

For each univariate regression model—that is, a regression of net price per subscriber on total MVPD subscribers only—I report a statistic known as an "adjusted R-squared" that measures how well a particular model fits the data above and beyond what can be explained by knowledge of the average rate alone. A high adjusted R-squared (that is, a value close to one) indicates that the model explains the variation in the data well, whereas a low adjusted R-squared (that is, a